

Amendments to the Claims (As Amended to Incorporate the Article 34 Amendments):

Please substitute pages 23-29 with the attached amended pages 23-29 of the claims as originally filed. The new pages incorporate revisions to the international PCT application which were modified under Article 34.

Before claim 1 on amended page 23 insert --I claim:--

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) SA soil compacting system, ~~having comprising:~~
 - a mobile, steerable soil compacting device-(3); and
 - a control device-(5);the control device (5) ~~having including:~~
 - a surface definition device (6) ~~for the definition by which allows an operator to establish a surface (1) to be compacted and of the associated surface boundaries-(2);~~
 - a position detection device (18) ~~for detecting the current position of the soil compacting device (3) at least in the vicinity of the surface boundaries-(2);~~
 - a motion controller (8a; 8b) ~~for changing a direction of travel by predetermining a target value for a traveling movement of the soil compacting device-(3), such that the soil compacting device (3) does not cross the respective surface boundary-(2), but rather continues its travel within the surface-(1).~~
2. (Currently Amended) SA soil compacting system according to Claim 1, ~~characterized in that~~ wherein

- the position detection device (18) is fashioned at least for the detection of an approach of the soil compacting device (3) to one of the surface boundaries (2);
- the direction of travel can be changed by the motion controller (8a; 8b) if the position detection device (18) determines an approach to the surface boundary (2).

3. (Currently Amended) SA soil compacting system according to Claim 2, **characterized in that** wherein the surface definition device (18) has a device for the mechanical, optical, magnetic, inductive, or capacitive identification of the surface boundaries (2).

4. (Currently Amended) SA soil compacting system according to Claim 3, **characterized in that** wherein the surface identification device is for mechanical identification and has a tape or wire ~~means~~ that can be stretched along the surface boundaries (2).

5. (Currently Amended) SA soil compacting system according to Claim 3, **characterized in that** wherein the surface identification device is for optical identification and has coloring agents that can be applied to the soil along the surface boundaries.

6. (Currently Amended) SA soil compacting system according to Claim 3, **characterized in that** wherein the surface identification device is for optical identification and has a photoelectric barrier.

7. (Currently Amended) SA soil compacting system according to ~~one of~~ Claim[s] 1 ~~to~~ 6, **characterized in that** wherein the motion controller (8a; 8b) effects a change of the direction of travel from the original direction of travel with a predetermined angle (α) that remains constant during the entire compacting process, or with angles that change during the compacting process and that are selected randomly.

8. (Currently Amended) SA soil compacting system according to Claim 1, ~~characterized in that~~wherein the control device ~~has comprises~~:
- a path planning device (7) for setting a predetermination for a travel path (4) on the basis of the defined surface (1) in such a way that the soil compacting device (3) travels over the surface (1) to be compacted completely at least once while adhering to the predetermined travel path;
wherein
 - the position detection device (18) ~~being~~ is fashioned for the detection of the current position of the soil compacting device (3) within the surface boundaries (2), and
 - the motion controller (8a, 8b) ~~being~~ is fashioned for the predetermination of a target value for a travel motion of the soil compacting device (3) based on a comparison of the current position with the predetermined travel path, in such a way that the soil compacting device (3) follows the predetermined travel path.
9. (Currently Amended) SA soil compacting system according to Claim 8, ~~characterized in that~~wherein the surface definition device (6) and/or the position detection device (18) has a coordinate detection device for determining absolute geographical locus coordinates of its location.
10. (Currently Amended) SA soil compacting system according to Claim 8 ~~or 9~~, ~~characterized in that~~wherein the surface definition device (6) has a memory device containing geographical locus information for the region of the surface (1) that is to be compacted.
11. (Currently Amended) SA soil compacting system according to ~~one of Claim[s] 8 to 10~~, ~~characterized in that~~wherein the surface boundaries (2) are capable of being defined by absolute locus coordinates.

12. (Currently Amended) SA soil compacting system according to ~~one of Claim[s] 8 to 11,~~
~~characterized in that~~wherein the predetermination of the travel path by the path planning
device (7) is capable of being defined in the form of absolute or relative geographical locus
coordinates.
13. (Currently Amended) SA soil compacting system according to ~~one of Claims 8 to 12,~~
~~characterized in that~~wherein the path planning device (7) has mathematical algorithms for
path-optimized and/or time-optimized path planning.
14. (Currently Amended) SA soil compacting system according to ~~one of Claims 8 to 13,~~
~~characterized in that~~wherein at least a part of the components of the control device (5), in
particular the surface definition device (6), the motion controller (8a), and/or the path planning
device (7), is situated spatially separate from the soil compacting device (3).
15. (Currently Amended) SA soil compacting system according to ~~one of Claim[s] 8 to 14,~~
~~characterized in that~~wherein the surface definition device (6) is situated spatially separate from
the soil compacting device (3), and ~~that~~wherein data can be transmitted between the surface
definition device (6) and the soil compacting device (3) in wireless fashion, in particular via
radio, infrared, or laser.
16. (Currently Amended) SA soil compacting system according to ~~one of Claim[s] 1 to 15,~~
~~characterized in that~~wherein an input device (9) for manually modifying the target value
predetermined by the motion controller (8a; 8b) is provided spatially separate from the soil
compacting device (3), and is coupled thereto via a radio, laser, or infrared path.

17. (Currently Amended) SA soil compacting system according to ~~one of Claim[s] 1 to 16,~~
~~characterized in that~~wherein the position detection device (18) is coupled to a memory device
for storing data concerning the positions reached by the soil compacting device (3).

18. (Currently Amended) SA soil compacting system according to ~~one of Claims 1 to 17,~~
~~characterized by~~wherein an evaluation device that is coupled to the surface definition device (6)
and to the position detection device (18), and that has a display (12) for the graphic
representation of the predetermined surface boundaries (2) and of the surface already compacted
at a given time by the soil compacting device (3).

19. (Currently Amended) SA soil compacting system according to ~~one of Claim[s] 8 to 18,~~
~~characterized in that~~wherein
- a compaction result detection device is provided for detecting the actual state of compaction of
the compacted soil;
- the compaction result detection device is coupled to the path planning device (7) for the
communication of information relating to the actual state of compaction; and that
- the path planning device (7) is fashioned for the definition of the predetermination of the travel
path (4), taking into account the actual state of compaction.

20. (Currently Amended) SA soil compacting system according to Claim 19, ~~characterized~~
~~in that~~wherein
- ~~in~~ the path planning device (7), the actual state of compaction can be compared with a
predetermined target state of compaction;
- the travel path (4) can be predetermined by the path planning device (7) in such a way that soil
surfaces in which the actual state of compaction exceeds the target state of compaction, so that a

sufficient compaction is already present, are no longer traveled over by the soil compacting device (3).

21. (Currently Amended) SA soil compacting system according to ~~one of Claim[s] 1 to 20,~~ ~~characterized in that~~ wherein the soil compacting device (3) ~~has~~ comprises:

- a drive mechanism (16) for producing an advance movement;
- a steering device (16) for producing a yaw moment about a vertical axle (29) of the soil compacting device (3);
- a movement detection device for detecting an actual value for the travel movement; and
- a travel regulation device (15) that can be charged with the actual value and the target value predetermined by the motion controller, for controlling the steering device and/or the drive mechanism in such a way that a control deviation formed by the difference between the actual value and the target value is minimal.

22. (Currently Amended) SA soil compacting system according to Claim 21, ~~characterized in that~~ wherein the drive mechanism has at least one vibration-exciting device (16) having two shafts (25, 26) that are parallel to one another and that can be rotated in opposite directions, each of which bears at least one imbalance mass, and whose phase position to one another can be adjusted.

23. (Currently Amended) SA soil compacting system according to Claim 21 ~~or 22,~~ ~~characterized in that~~ wherein on at least one shaft (25, 26) of the vibration-exciting device (16) two imbalance masses are situated so as to be axially offset to one another, and ~~that~~ wherein the steering device (16) is fashioned for the adjustment of the phase position of the two imbalance masses.

24. (Currently Amended) SA soil compacting system according to ~~one of~~ Claims 21 to 23, ~~characterized in that~~ wherein the drive mechanism and the steering device are formed by a system of a plurality of vibration-exciting devices ~~(27, 28; 30)~~ that are held stationary relative to one another, the vibration-exciting devices ~~(27, 28; 30)~~ each having two shafts that are parallel to one another and that can be rotated in opposite directions, each shaft bearing at least one imbalance mass, the phase position of the shafts being adjustable, an advance movement being producible in a direction of advance by each of the vibration-exciting devices ~~(27, 28; 30)~~.

25. (Currently Amended) SA soil compacting system according to ~~one of~~ Claim[s] 21 to 24, ~~characterized in that~~ wherein the direction of advance of at least one ~~(30)~~ of the vibration-exciting devices differs from that of the others ~~(27, 28)~~.

26. (Currently Amended) SA soil compacting system according to ~~one of~~ Claim[s] 21 to 25, ~~characterized in that~~ wherein a soil contact plate ~~(31)~~ charged by the vibration-exciting device or devices has an essentially circular outline.

27. (Currently Amended) MA method for automated soil compacting, ~~having comprising~~ comprising the steps of:

- defining ~~of~~ surface boundaries ~~(2)~~ of a surface ~~(1)~~ to be compacted, using a surface definition device ~~(6)~~;
- ~~automatic~~ automatically travelling ~~travel~~ of a soil compacting device ~~(3)~~ within the surface boundaries ~~(2)~~, essentially in a straight line;
- ~~detection~~ detecting ~~of~~ an approach of the soil compacting device ~~(3)~~ to one of the surface boundaries ~~(2)~~; and

- ~~automatic~~automatically modifying ~~modification~~ of the direction of travel of the soil compacting device (3) in such a way that the soil compacting device (3) does not cross the respective surface boundary (2), but rather continues its travel within the surface (1).

28. (Currently Amended) MA method for automated soil compacting, ~~having comprising~~ the steps of:

- ~~defining of~~ surface boundaries of a surface (1) to be compacted, and storing of data representing the surface boundaries (2) in a surface definition device (6);
- ~~planning of~~ a predetermination for a travel path (4) in such a way that a soil compacting device (3) travels completely over the surface (1) to be compacted at least once, while adhering to the predetermined travel path;
- ~~automatic~~automatically travelling ~~travel~~ of the soil compacting device (3) along the predetermined travel path.

29. (Currently Amended) MA method according to Claim 28, ~~characterized in that~~wherein the automatic ~~travel~~travelling step comprises the following steps:

- ~~detection of~~detecting the current position of the soil compacting device (3);
- ~~comparison of~~comparing the current position with the predetermined travel path; and
- ~~automatic travel~~automatically travelling and steering of the soil compacting device (3) in such a way that the soil compacting device (3) follows the predetermined travel path.

30. (Currently Amended) MA method according to Claim 29, ~~characterized by further~~ comprising the steps:

- ~~continuous detection~~continuously detecting of the actual state of compaction of the compacted soil;
- ~~comparison~~comparing of the actual state of compaction with a target state of compaction;

- ~~compensation of~~compensating the predetermined travel path in such a way that areas of the soil in which the actual state of compaction is greater than the target state of compaction are no longer traveled over by the soil compacting device-(3).